

ABSTRACT

In one embodiment, a heat sink apparatus that provides electrical isolation for an integrally shielded, electronic circuit. The heat sink apparatus comprises a substrate having a first hole extending between a first and second sides of the substrate, a conductive layer attached to the second side, an electrically and thermally conductive heat sink having a protrusion, wherein the heat sink is attached to the first side of the substrate, and an electrically conductive plate having a second hole extending through the plate. The protrusion extends through the first hole and has a surface located at substantially the same level as that of the conductive layer. An electronic component is attachable to the protrusion surface. The plate is electrically coupled to the conductive layer and to the protrusion surface such that the area between the protrusion and the conductive layer is covered by electrically conducting area of the plate.